

## A BLACK-BELLIED STORM PETREL FROM WESTERN AUSTRALIA

By R.E. JOHNSTONE, Western Australian Museum, Perth, Western Australia.

On 15 April 1985 Mrs V. Rowbotham found a dead seabird on Middleton Beach, Albany, Western Australia, which was sent to the Western Australian Museum. It was prepared into a study skin (registered number A18420) and identified as a Black-bellied Storm Petrel *Oceanites tropicus* (Gould), the first specimen for this State.

Details of the specimen are as follows; male with testes 4 x 2 mm, weight 45 g, total length 210 mm, exposed culmen 15.0 mm, entire culmen 23.0 mm, wing 164 mm, tail 74 mm, tarsus 41 mm, middle toe and claw 28 mm, skull fully ossified. Upperparts sooty-black, darkest on head, wing quills and tail and palest on the primary and secondary coverts; rump, uppertail coverts and base of outer tail feathers white; breast sooty-black, the black extending as an ill-defined stripe down the centre of white belly; underwing white enclosed by blackish-brown on leading edge and grey on trailing edge; undertail coverts sooty-black, the outer coverts mottled with white.

The Black-bellied Storm Petrel breeds on islands in the sub-Antarctic zone north to about 45°S. Jouanin and Mougin (1979) give the breeding islands as ? South Georgia, South Orkney, South Shetland, ? Bouvet, Crozet (East), Kerguelen, Auckland, ? Bounty and Antipodes Islands (Fig. 1). Harrison (1983) also mentions Prince Edward Island as a probable nesting site. It has a more southern breeding range than the closely related White-bellied Storm Petrel *Oceanites gallarius*.

Black-bellied Storm Petrels begin egg laying in December-January and fledging occurs from mid-April onwards (Harrison 1983). After breeding many birds disperse north to the tropics to winter in warmer parts of the Atlantic, Indian and Pacific Oceans. They have been recorded in the Atlantic off west Africa, in the Indian Ocean near the Maldive Islands and in the Bay of Bengal, and in the Pacific Ocean near northern Australia, the Solomons, New Hebrides, Samoa and Marquesas Islands and near San Vicente de Canete, Peru (Jouanin and Mougin 1979). Bailey (1968) recorded large numbers in the western Arabian Sea in May 1964 and mentions that further south in June and July the same year they were less common.

In Australian and New Zealand waters the Black-bellied Storm Petrel occurs north mainly to about latitude 35°S. It is fairly common in the Southern Ocean, in the Tasman Sea, south of Tasmania and west to the Indian Ocean. Despite its huge wintering range it is seldom recorded in Australian coastal waters, and there are very few Australian specimens.

Salvin (1896) lists a skin in the British Museum (Natural History) labelled Port Essington. Alexander (1922) lists a mounted specimen in the Queensland Museum, labelled south-east Queensland but with no further details. Roberts (1973) mentions beach derelicts found on North Stradbroke Island in July 1973 and September 1973. Stokes and Corben (1985) saw a single bird in the western Coral Sea about 150 km west of Carola Cay in May 1981. Mathews (1917) lists a specimen in the Macleay Museum, obtained off the New South Wales coast in May 1875. McKean and Lewis (in Rogers 1975) saw six storm petrels about 20 km off Batemans Bay, New South Wales, in September 1975, two of these were identified as *O. tropicus*. Morris, McGill and Holmes (1981) list sight records off Ballina, New South Wales, in June 1979 and off Evans Head, New South Wales, in October 1979.

There appears to be no records for Victoria. The sole South Australian record is a specimen in the British Museum (Natural History) collected in the south Indian Ocean in latitude 43°S longitude 140°E, during the voyage of the HMS "Rattlesnake" (Salvin 1896). Gould (1865) states that the species was first seen off Cape Agulhas on 12 August 1839 [= 1838] and from that date almost daily observed until he arrived in Tasmania on 19 September; its numbers gradually increasing from the neighbourhood of the islands of St Paul and Amsterdam to the termination of the voyage. The ship on which Gould travelled was off King George Sound, Western Australia on 8 September 1838. In March 1840 during his passage home he found the species abundant between the eastern coast of Australia and New Zealand. Falla (1930) during a voyage between Fremantle and Durban from 24 September to 8 October 1929 only identified the species with certainty on two days (in longitude 86°E and 67°E), although similar storm petrels were seen over the whole voyage.

Figure 1. Map showing the breeding islands (underlined) and wintering areas of *Oceanites tropicus*.



The apparent scarcity of the Black-bellied Storm Petrel in Australia could be due to its keeping well offshore during migration, or perhaps it is nowhere a common bird compared to say Wilson's Storm Petrel.

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#### EFFECTS OF FROSTING ON SOME COASTAL PLANT SPECIES

By W. FOULDS, Claremont Campus, Western Australian College of Advanced Education, Princess Road, Claremont 6010.

During the nights of 9, 13, 14 and 22 June, 1981 in the Perth area the ambient temperature reached as low as 4 or 5°C (Perth Meteorological Bureau) and morning hoar-frost indicated the temperature in depressions along the coast dropped to below zero. In limestone heathlands in hollows at Ocean Reef (100 m from the sea) most of the plants were partially or completely defoliated. There were, however, a few unaffected species such as *Acacia cochlearis* (on the deeper soils) and *Leucopogon pauciflorus*, and two ground cover plants, *Loxocarya flexuosa* and *Lepidosperma gracile*.

Species with only a few plants slightly defoliated included *Allocasuarina humilis*, *Rhagodia baccata*, *Scaevola crassifolia* and *Spyridium globulosum*. Moderately to extensively defoliation species were *Calothamnus sanguineus*, *Carpobrotus edulis*, *Hardenbergia comptoniana* and *Solanum symonii*.

Many of the less severely damaged species had recovered within four or five weeks. Some of the more susceptible species which were fully defoliated were even affected (though less frequently) on slightly higher ground (only metres above the hollows) on areas where other plants were unaffected. These included the codominants *Acacia truncata* and *Dryandra sessilis* (Parrot Bush), which contained no underground parts other than normal roots and which were completely defoliated and died. The former species had failed to regenerate even from seed by April 1985, by which time, many small (0.5 m) plants of the Parrot Bush had germinated and begun to recolonize the area.

The method of recovery of the shrubs varied. The heavily affected *Hibbertia hypericoides* along with other less affected species such as *Grevillea*